

FIG. 1

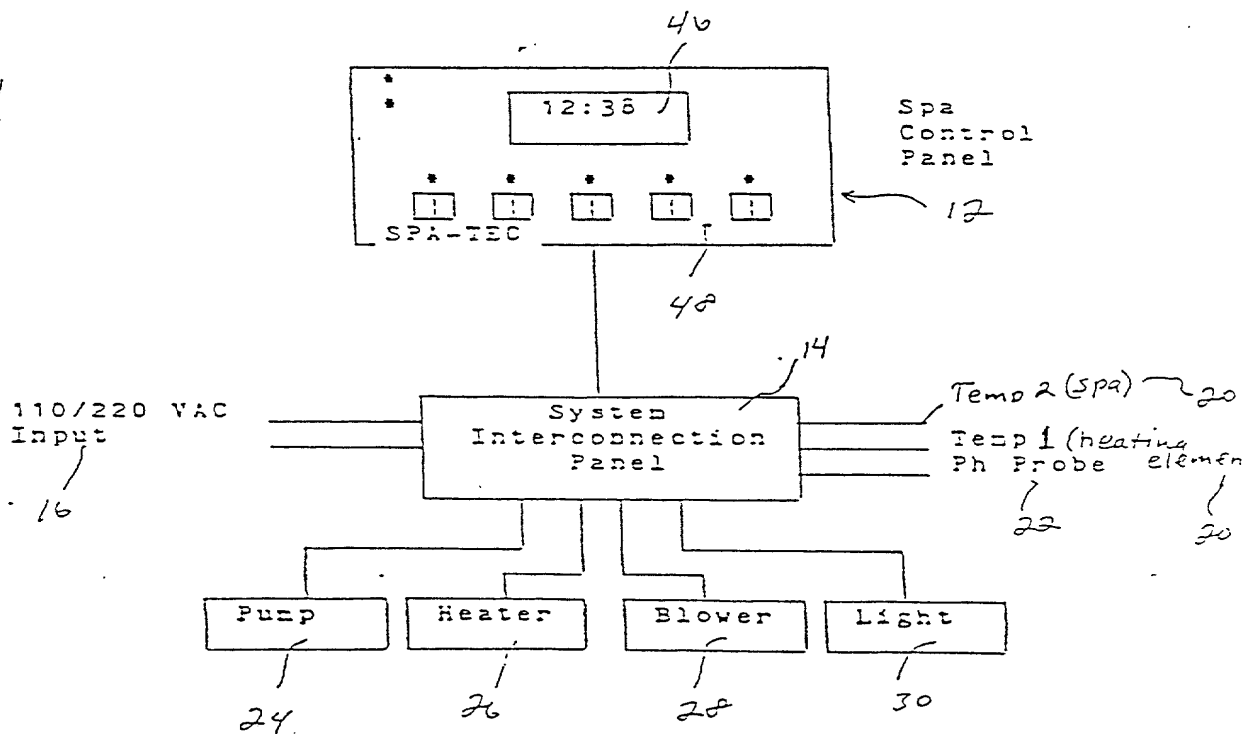


FIG. 2

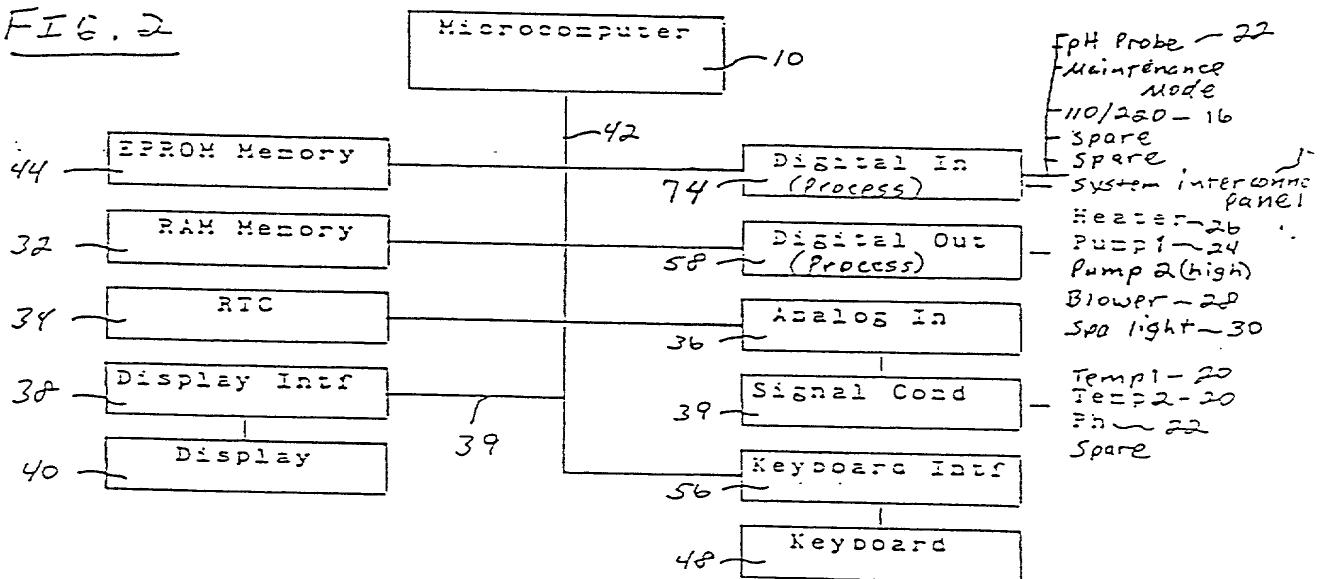


FIG. 3

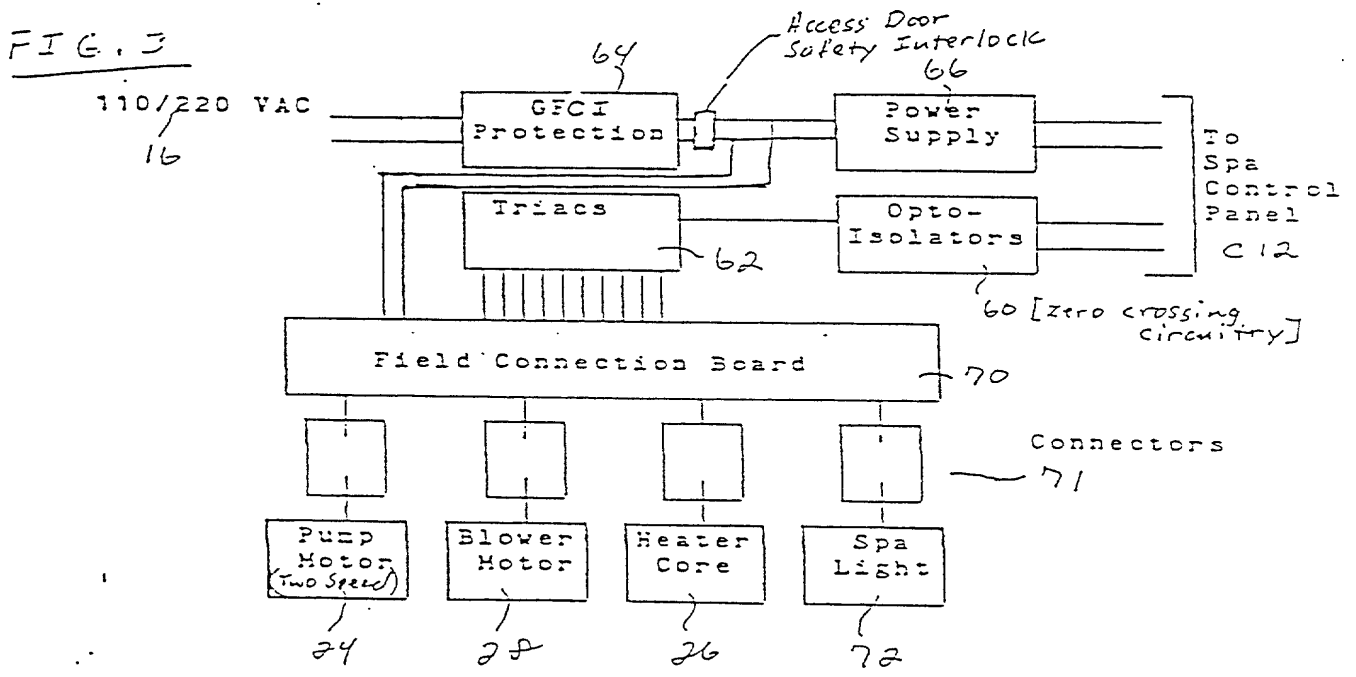


FIG. 4

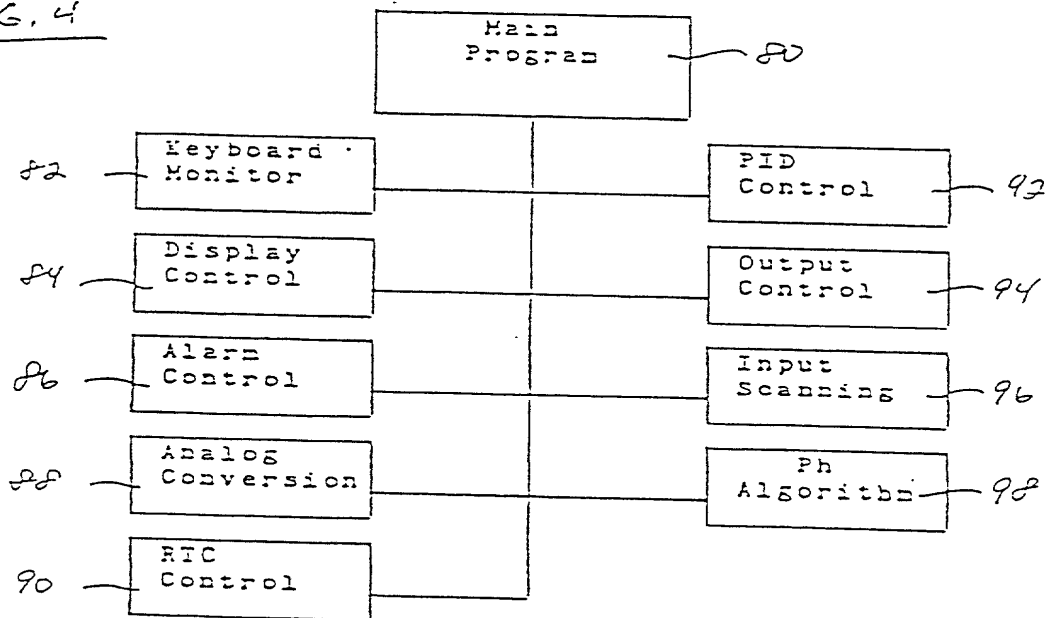


FIG. 5

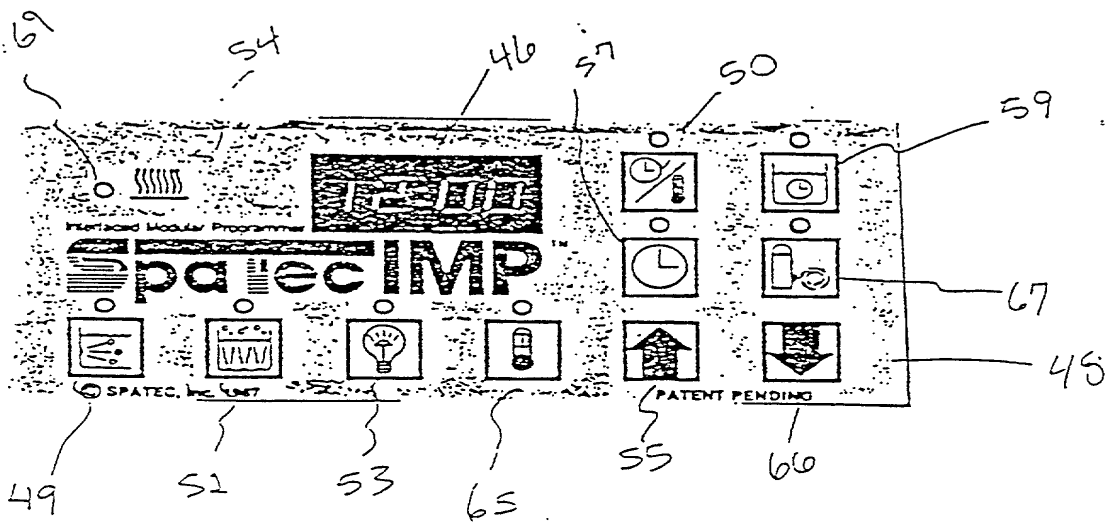


FIG. 6 - Overall flow or control

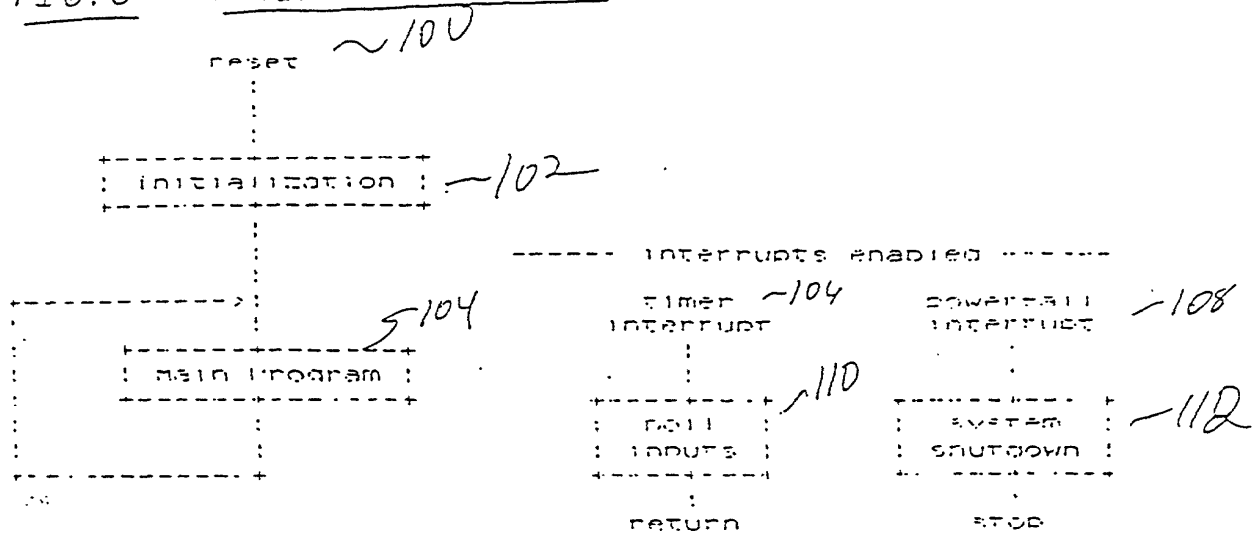


FIG. 7

Temp_F = Desired Temperature of Spa Water

Temp₁ = Temperature at First Sensor (S₁)

Temp₂ = Temperature at Second Sensor (S₂)

Temp_D = Temp₁ - Temp₂

'ΔL' = Limit of acceptable temperature difference (plus or minus).

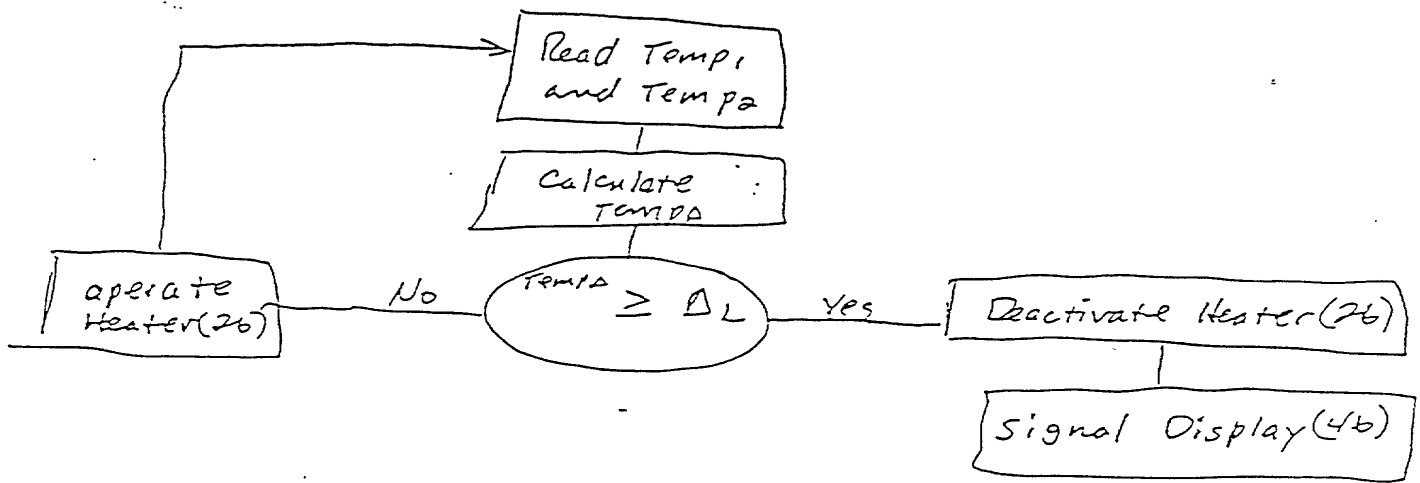


FIG. 2

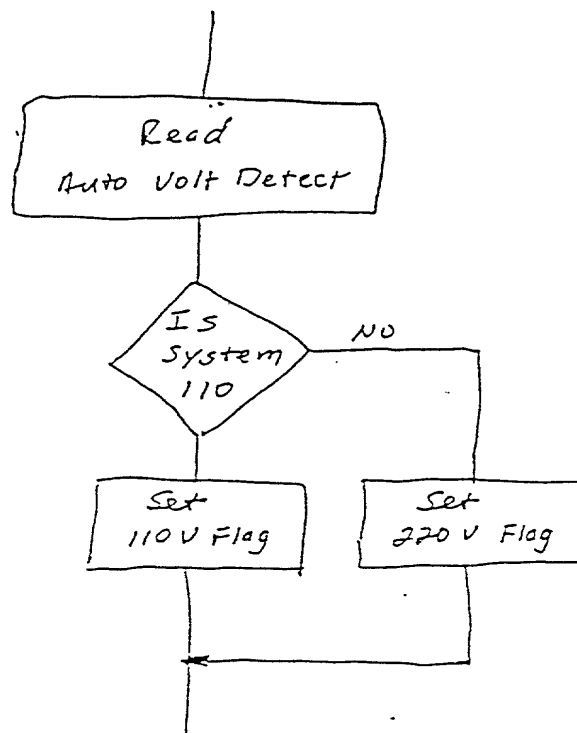


FIG. 9

Rate = Rate of Heating

Rate_{AV} = Rate of Heating (average)

Temp_F = Desired temperature of Spa water

Temp_I = Initial temperature of Spa water

Temp_Δ = Temp_F - Temp_I

Time_I = Time (initial)

Time_F = Time (final)

Time_Δ = Time_F - Time_I

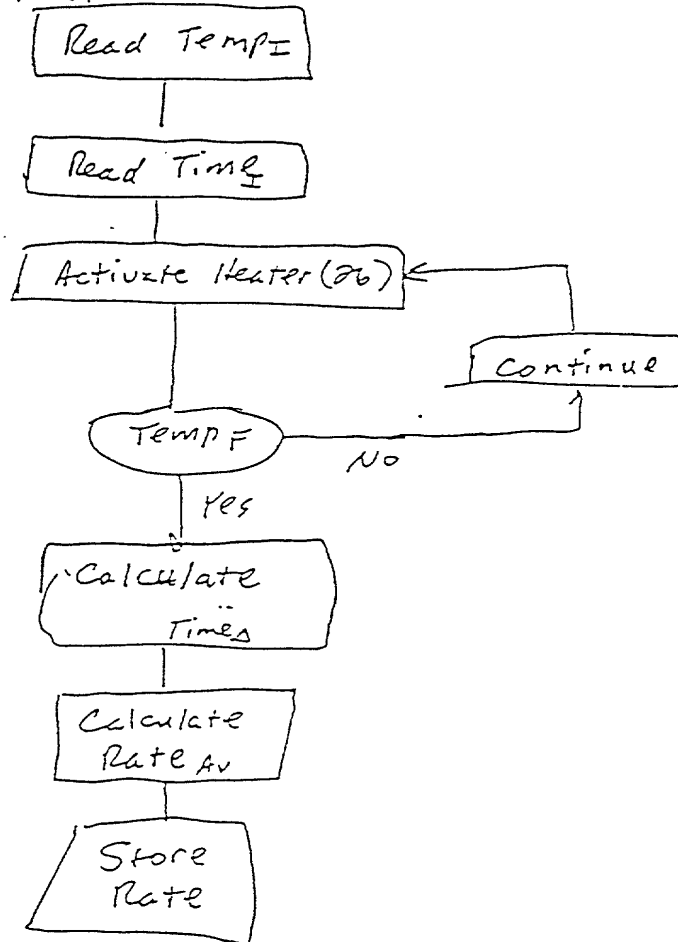


FIG 10

Temp_I = Initial temperature of spa water

Temp_F = Final temperature (desired) of spa water

Temp_Δ = Temp_F - Temp_I

Rate = Rate of heating

Rate_{av} = Rate of heating (average)

Time_I = Initial time

Time_F = Final time

Time_Δ = Time_F - Time_I

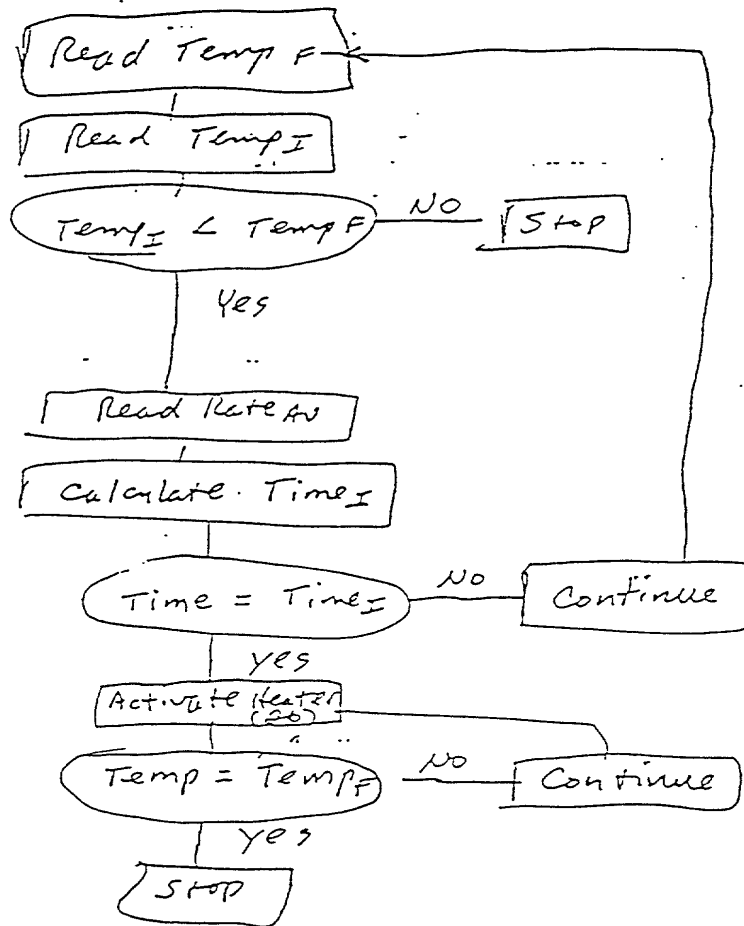


FIG. 11

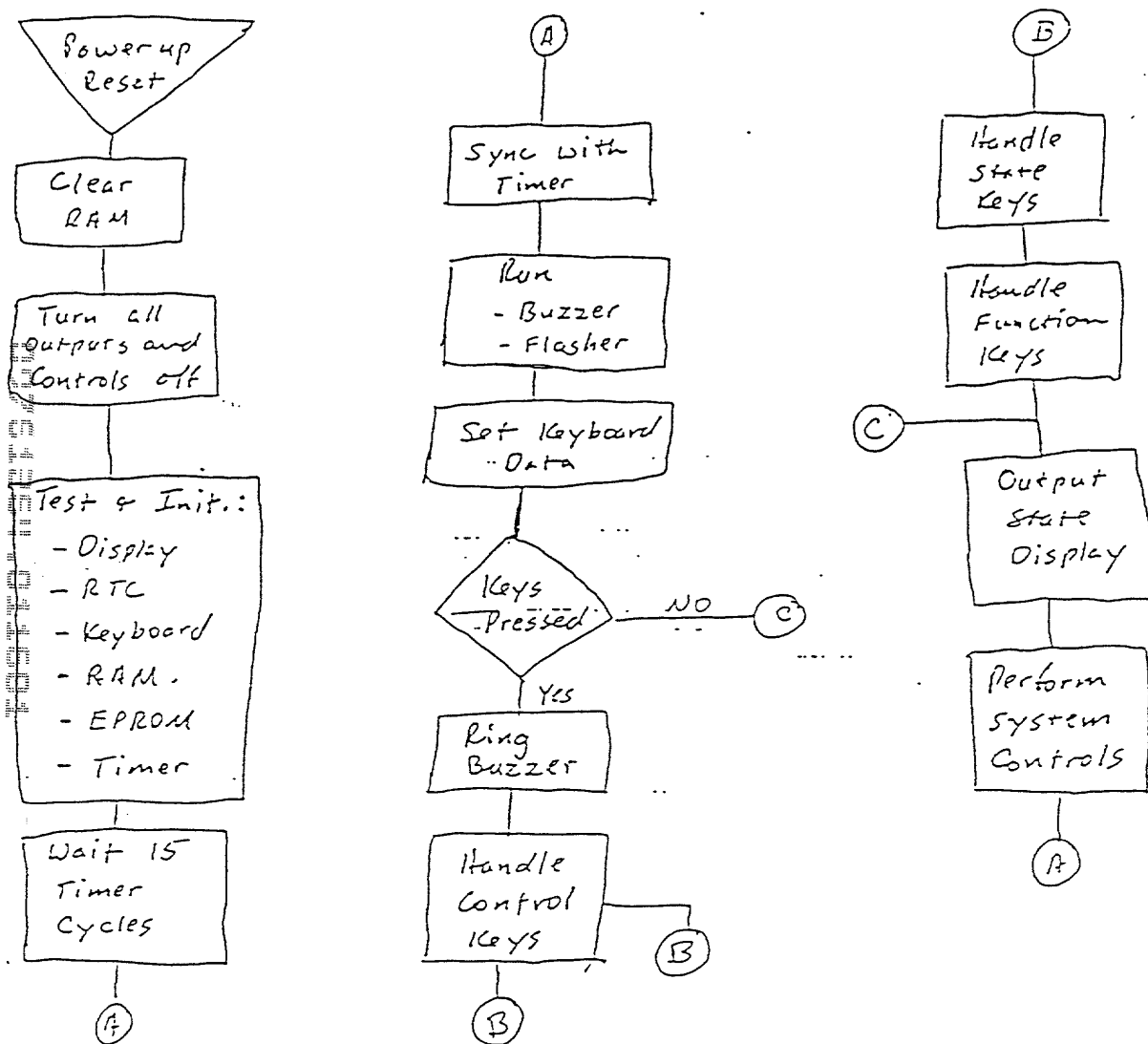


FIG. 12

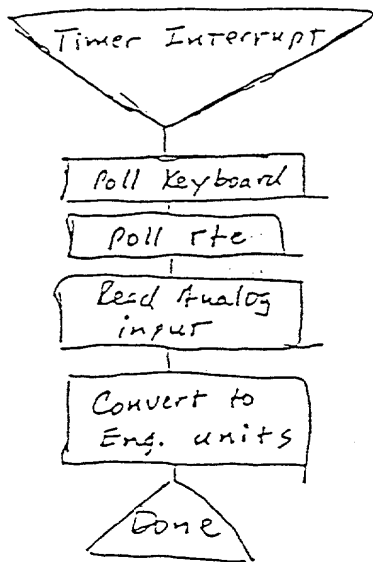


FIG. 13

